



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/585,768

06/18/2007

Rolf Dahlbeck

SNT-100US

1612

23122 7590 07/16/2009  
RATNERPRESTIA  
P.O. BOX 980  
VALLEY FORGE, PA 19482

EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,768	<b>Applicant(s)</b> DAHLBECK ET AL.	
	<b>Examiner</b> HUY-TRAM NGUYEN	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 and 22 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/12/06, 2/19/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by **Ehrfeld et al. (DE19927556)**

Regarding Claim 13, Ehrfeld et al. reference discloses a method for mixing at least two fluids in a micromixing reactor constructed from a stack of films or thin plates **(Figure 1, numerals 20a, 20b – mixing plates),**

wherein a mixing chamber extends transverse to the film planes **(Figure 1, numeral 23 – mixing chamber),** and

the fluids for mixing are introduced separately and adjacent one another on the film planes transverse to the longitudinal axis of the mixing chamber, so that the mixing of the fluids substantially takes place directly on their introduction into the mixing chamber **(Figures 1,2, and 3a),** and

wherein the resulting mixture is tempered at least on a section of the circumference of the mixing chamber by a tempering means **(Page 3, Lines 8-13).**

Regarding Claim 14, adding a catalyst or an auxiliary substance supporting the mixing in partial amounts to the fluids supplied on the film planes is a process limitation and does not add any additional structure to the mixer of Ehrfeld et al.

Regarding Claim 15, Ehrfeld et al. reference discloses a micromixing reactor for mixing at least two fluids constructed from a stack of films or thin plates **(Page 1, Lines 1-2 and Figure 1, numerals 20a and 20b),**

wherein a mixing chamber extends vertical to the film planes **(Figure 1, numeral 23 – mixing chamber is perpendicular to the planes of the plates (20a & 20b)),** supply passages for the fluids to be mixed are formed in the planes of the films, the mouth openings of which supply passages are provided in the mixing chamber adjacent or above one another **(Figures 1, 2 and 3a),** and

wherein the mixing chamber has a tempering means on at least one portion of its circumference **(Page 3, Lines 8-13).**

Regarding Claim 16, Ehrfeld et al. reference discloses the micromixing reactor according to claim 15, wherein the mixing chamber has a long cross-sectional shape and the supply passages open into this in the area of a narrow side of the mixing chamber **(Figures 1 and 2,—numeral 23 – mixing chamber with the length being the same as the total thickness of the stack of the plates (20a, 20b)).**

Regarding Claim 17, Ehrfeld et al. reference discloses the micromixing reactor according to claim 16, wherein on at least one broad side of the mixing chamber a tempering passage is formed extending parallel to the mixing chamber **(Page 3, Lines 8-13 – central the main channel (23)).**

Regarding Claim 18, Ehrfeld et al. reference discloses the micromixing reactor according to claim 15 wherein the mixing chamber is formed approximately annular in cross section, and is delimited from the tempering means on the inner circumference, wherein on approximately diametrically opposite sides of the mixing chamber, supply passages open for the fluids to be mixed. Ehrfeld et al. reference discloses that a heat exchanger being integrated into the micromixer and also central in the main channel and the product stream is led around this heating or cooling tube (**Page 3, Lines 8-13**).

Regarding Claim 20, Ehrfeld et al. reference discloses the micromixing reactor according to claim 15, wherein in the axial direction of the mixing chamber between the overlapping mixing areas, partition elements are provided, which extend in the mouth area parallel to the film planes (**Figure 1, numeral 25**).

### ***Claim Rejections - 35 USC § 103***

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 1797

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ehrfeld et al. (DE19927556)**

Regarding Claim 19, Ehrfeld et al. reference discloses the micromixing reactor according to claim 18, wherein on the outer circumference of the mixing chamber between the supply passages, tempering passages are formed extending parallel to the mixing chamber (**Page 3, Lines 8-13 – the product stream is led around this heating or cooling tube**).

Regarding Claim 22, Ehrfeld et al. reference discloses the micromixing reactor according to claim 18 including the heat exchanger in the center of the main channel. However, Ehrfeld does not disclose that the tubular tempering cylinder being formed in the mixing chamber by holes and wall sections of the individual plates or films stacked over one another, and the wall sections of the tempering cylinder are held by moulded-on bridges. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use some mechanical parts (such as flanges, clamps or moulded on bridges) to keep the heat exchanger in place.

***Allowable Subject Matter***

6. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding Claim 21, Ehrfeld et al. reference discloses the micromixing reactor according to claim 18 except for in the circumferential direction of the mixing chamber before the individual mixing areas **a shield screen** is arranged, which extends approximately parallel to the axis of the mixing chamber. There is no motivation/suggestion to modify the mixing reactor of Ehrfeld et al. with this structure.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN  
7/14/09

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797